

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
2 August 2001 (02.08.2001)

PCT

(10) International Publication Number
WO 01/055895 A3

(51) International Patent Classification: G06F 17/60

(21) International Application Number: PCT/US01/00586

(22) International Filing Date: 8 January 2001 (08.01.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/493,517 28 January 2000 (28.01.2000) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:

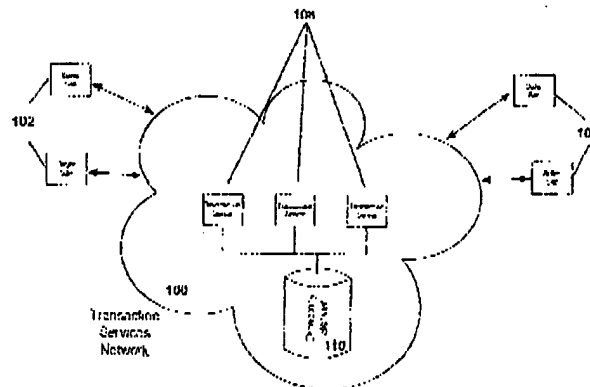
US 09/493,517 (CON)
Filed on 28 January 2000 (28.01.2000)(71) Applicant (for all designated States except US): COM-
MERCE ONE, INC. (US/US); 4440 Rosewood Drive,
Pleasanton, CA 94588-3050 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): FUCHS, Matthew Published:
[US/US]; 16229 Inverness Way, Los Gatos, CA 95032 — with international search report(US). KOISTINEN, Jari (SE/US); 4159 P 13 Camino
Way, Palo Alto, CA 94306 (US) DAYIDSON, Andrew
[US/US]; 1222 Hopkins Gulch, Boulder Creek, CA 95006
(US).(74) Agent: DAVIS, Paul; Wilson Sonsini Goodrich & Rosati,
650 Page Mill Road, Palo Alto, CA 94304-1050 (US).(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,
DE, DK, DM, DZ, EE, ES, FI, GB, GR, GU, GM, HR,
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LA, LK, LR,
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MY,
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,
TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SI, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IL,
IT, LI, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF,
CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR SCHEMA EVOLUTION IN AN E-COMMERCE NETWORK



(57) Abstract: A method and computer system are described for conducting commercial transactions by the exchange of electronic documents. The computer system includes a transaction services network, which comprises a plurality of transaction servers for providing services to support commercial transactions. Trading partners operate servers which communicate with the transaction services network via the Internet. The electronic documents are exchanged between trading partners engaged in a transaction. The documents are written in a markup language such as XML. The tags used in the document instances are defined in schemas. Each schema defines a document type, which corresponds to a type of transaction. An enhanced type of XML schema may be used which supports integrity constraints and polymorphism. Schemas are identified by the use of Uniform Resource Names. XML processors residing on transaction servers or trading partner servers parse document instances by retrieving the URNs corresponding to the schemas used to interpret the document. The URNs are converted to location-dependent URIs in order to locate the schemas. URNs are resolved to location-dependent URIs by use of the LDAP protocol. URNs may be converted to LDAP URIs which are used to search LDAP compliant directories. The directories serve as registries for the URI values corresponding to the URNs.

WO 01/055895 A3



12/15

(88) Date of publication of the international search report:
13 February 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette

Jan. 3. 2005 4:02PM

Haynes Beffel & Wolfeld LLP
INTERNATIONAL SEARCH REPORT

No. 5554 P. 13/15

Intens. of Application No
PCT/US 01/00586

13/15

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 G06F17/60		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC 7 G06F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	W3C: "Schema for Object-Oriented XML 2.0 (SOX)" W3C NOTE, 'Online! 30 July 1999 (1999-07-30), XP002203857 Retrieved from the Internet: <URL:http://www.w3.org/TR/NOTE-SOX/> 'retrieved on 2002-06-27! the whole document	1-35
X	W3C: "Resource Description Framework (RDF) Schema Specification" W3C PROPOSED RECOMMENDATION, 'Online! 3 March 1999 (1999-03-03), XP002203858 Retrieved from the Internet: <URL:http://www.w3.org/TR/1998/WD-rdf-schema/> 'retrieved on 2002-06-27! the whole document	1-35
-/-		
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "I" earlier document has been published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "U" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "S" document member of the same patent family		
Date of the actual completion of the international search 28 June 2002		Date of mailing of the international search report 15/07/2002
Name and mailing address of the ISA European Patent Office, P.O. Box 1615 Mannheim 2 NI - 72010 Mannheim Tel. (49-714) 240-2040, Telex 511 651 epo d, Fax (49-714) 240 2015		Authorized officer Sündermann, R

Form PCT/ISA/210 (second sheet) (July 1997)

14/15

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	W3C: "XML Schema Part1: Structures" W3C WORKING DRAFT, 'Online! 6 May 1999 (1999-05-06), XP002203859 Retrieved from the Internet: <URL:http://www.w3.org/1999/05/06-xmlschem a-1/> 'retrieved on 2002-06-27! the whole document	1-35
A	W3C: "XML Schema Part2: Datatypes" W3C WORKING DRAFT, 'Online! 6 May 1999 (1999-05-06), XP002203860 Retrieved from the Internet: <URL:http://www.w3.org/1999/05/06-xmlschem a-2/> 'retrieved on 2002-06-27! the whole document	1, 14, 25, 31
A	KENT BROWN: "BizTalk: Fluent In E-Business" DEVX WEBSITE, 'Online! December 1999 (1999-12), XP002203861 Retrieved from the Internet: <URL:http://www.devx.com/upload/free/featu res/entdev/1999/12dec99/kb1299/kb1299.asp> 'retrieved on 2002-06-28! the whole document	1, 14, 18, 23-25, 31, 32, 34
A	YEONG, HOWES & KILLE: "Lightweight Directory Access Protocol (LDAP)" THE INTERNET ENGINEERING TASK FORCE, 'Online! March 1995 (1995-03), XP002203862 Retrieved from the Internet: <URL:http://www.ietf.org/rfc/rfc1777.txt> 'retrieved on 2002-06-27! the whole document	1, 14, 25, 31
A	R. MOATS: "URN Syntax" THE INTERNET ENGINEERING TASK FORCE, 'Online! May 1997 (1997-05), XP002203863 Retrieved from the Internet: <URL:http://www.ietf.org/rfc/rfc2141.txt> 'retrieved on 2002-06-27! the whole document	1, 14, 25, 31
A	W3C: "Extensible Markup Language (XML)" W3C SPECIFICATION, 'Online! 8 December 1997 (1997-12-08), XP002203864 Retrieved from the Internet: <URL:http://www.w3.org/TR/PR-xml-971208> 'retrieved on 2002-06-27! the whole document	1, 14, 25, 31

-/-

INTERNATIONAL SEARCH REPORT

Intern. Application No.
PCT/US 01/00586

15/15

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	NILS KLARLUND, ANDERS MOLLER, MICHAEL I. SCHWARTZBACH: "Document Structure Description 1.0 (DSD)" AT&T AND BRICS, 'Online! 1999, XP002203865 Retrieved from the Internet: <URL:http://www.brics.dk/USD/dsddoc.html> 'retrieved on 2002-06-27!' the whole document ----	1, 14, 25, 31
A	NARAYANASWAMY K ET AL: "An incremental mechanism for schema evolution in engineering domains" DATA ENGINEERING, 1988. PROCEEDINGS. FOURTH INTERNATIONAL CONFERENCE ON LOS ANGELES, CA, USA 1-5 FEB. 1988, WASHINGTON, DC, USA, IEEE COMPUT. SOC. PR, US. 1 February 1988 (1988-02-01), pages 294-301, XP010011426 ISBN: 0-8186-0827-7 the whole document -----	1, 14, 25, 31

Form PCT/ISA/10 (continuation of second sheet) (July 1993)